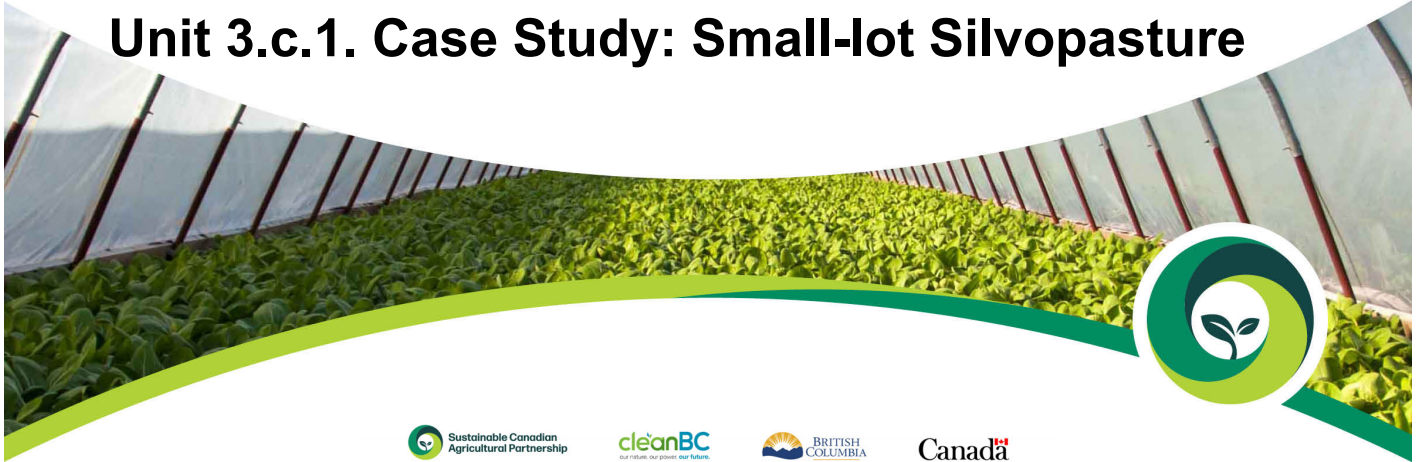


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Silvopasture In British Columbia Information Series

Unit 3.c.1. Case Study: Small-lot Silvopasture





Acknowledgment

This work has been funded by the Governments of Canada and British Columbia under the Sustainable Canadian Agricultural Partnership, a federal-provincial-territorial initiative.

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2

Insert local indigenous territorial acknowledgment.

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Silvopasture in BC Information Series Content Guide



Core Units	Case Studies	Supplemental Units
0. Series Overview		
1. Introduction		1.s. History of SP in BC
2. Science Behind SP	2.c.1 Production Synergies: Kootenay Tree Farms	2.s.1. Light & Microclimate
	2.c.2 Riparian Silvopasture: Silver Hills Ranch	2.s.2. Hydrology
3.1. SP BMPs - part 1	3.c.1 Small-lot SP: Just Another Weed Patch Farm	3.s. Managing Damage
3.2. SP BMPs - part 2	3.c.2 Mature Forest to SP: Indian Gardens Ranch	
4. SP Planning	4.c.1 Planning on Crown Land: SP Pilot Project	
	4.c.2 Adaptive Management at Aveley Ranch	

3

This case study is presented to reinforce information provided in the first three units of the Silvopasture in BC Information Series:

- An Introduction to silvopasture;
- The science behind silvopasture; and,
- Silvopasture BMPs.

Unit 3.c. Case Study: Small-lot Silvopasture

Goal

Gain a deeper understanding of silvopasture planning, implementation and management through British Columbia case studies.

Suggested Prerequisites

Modules 3.1 and 3.2: Silvopasture BMPs.

Content

Just Another Weed Patch Farm - small lot silvopasture;



In this unit we'll look in depth at an example of silvopasture use in BC to gain a better understanding of the planning, implementation and management considerations.

Prior to commencing this module, it is recommended that you should have completed core units 1, 2 and 3 in this information series.

This case study will cover a diverse small-lot silvopasture operation on Gabriola Island: Just Another Weed Patch Farm.

Small Lot Silvopasture

From Hayfield to Nut Orchard

Using silvopasture as a transitional production strategy.

Demonstration headed by Sonja Zupanec and Jeff Rietkerk (Just Another Weed Patch Farm) and funded by the BC Agroforestry Industry Development Initiative (2003-2013).



5

Success in small-lot agriculture often requires using intensive, efficient use of the land, as well as targeting higher-value niche markets. Planting an orchard on your small lot farm means you likely need a transition strategy to generate income while waiting for your first harvest to develop. Particularly when that orchard occupies the majority of your productive land base.

Silvopasture is an option for that transition period and was the focus of a demonstration headed by Sonja Zupanec and Jeff Rietkerk (Just Another Weed Patch Farm) and funded by the BC Agroforestry Industry Development Initiative (2003-2013).

Funding and support for the Agroforestry Initiative was provided by Agriculture and Agri-Food Canada and the British Columbia Ministry of Agriculture and Food. The Federation of British Columbia Woodlot Associations administered the Initiative.

Landscape Considerations



Just Another Weed Patch Farm, Gabriola Island

Transforming a 2-acre hayfield to a nut orchard with pasture-raised poultry.

- Old hayfield generating limited cash-flow.
- Farm borders nature reserve.
- Transition to more intensive agriculture.
- Improved aesthetics.

6

Just Another Weed Patch (JAWP) Farm is vibrant and diverse small-lot agriculture operation on Gabriola Island.

This farm is typical of many small-lot operations in BC who have been challenged to find viable, long-term agriculture models. Historic subdivision and fragmentation of agricultural parcels dictated a different management model than those suited to large farms and ranches with room to expand.

Existing hay production at JAWP was generating limited cash-flow to sustain the farm. It was decided to transform a small hayfield into a nut orchard as part of a diversification strategy. This strategy fit with the producer interests and gave access to a unique, local production opportunity. The farm, therefore, decided to plant a diverse nut and hardwood orchard on 2-acres.

The farm location also factored into the decision to plant an orchard. It borders on *Elder Cedar*, a 100 acre, local government-owned and managed nature reserve.

Establishing a nut orchard between the nature reserve and rest of the farm property creates a transition zone and buffer. This buffer benefits and supports wildlife habitat and travel corridors, as well as other biodiversity on, and off, the adjacent nature reserve.

The nut orchard was also chosen to improve the aesthetics of the property.

Establishing the Orchard

The gulf islands have one of the most favorable climates in BC for nut crops.

This grove was planted to a mixture of:

- Blight resistant filbert (*Corylus* sp.)
- Chinese chestnut (*Castanea sativa*)
- English walnut (*Juglans regia*)
- Butternut (*Juglans cinerea*)
- Japanese Heartnut (*Juglans ailantifolia*)
- Black walnut (*Juglans nigra*)



7

The gulf islands have one of the most favorable climates in BC for nut crops.

The nut grove at JAWP was planted to a mixture of:

- Blight-resistant filbert (*Corylus* sp.);
- Chinese chestnut (*Castanea sativa*)
- English walnut (*Juglans regia*);
- Butternut (*Juglans cinerea*);
- Japanese Heartnut (*Juglans ailantifolia*); and,
- Black walnut (*Juglans nigra*).

250 trees were planted in total for an average density of 125 sph.

From the time of planting, it can take 7 to 10 years for the first significant nut crops to develop. Within 15 years, the nut grove is predicted to be capable of producing over 4000 lbs of nuts per year in this 2-acre planting.

Over the long term, a diverse nut grove can have high rates of return on investment from the sale and marketing of nut crops and high-quality hardwood for niche woodworking.

It is the transition period from planting through to the first nut crops for sale, silvopasture can help by generating cash flow by providing a sustainable grazing resource.

Silvopasture Trials



- Initial plan was to pasture sheep in dormant season and laying hens the remainder of the year.
- Extra time needed to monitor sheep use.
- Poultry, by virtue of size, had no significant negative impacts on the trees.

While waiting for the trees to mature into a planned alley cropping setting for specialty foods and flowers between the mature trees, the existing forage crops provided an opportunity for a silvopasture.

Jeff and Sonja initially experimented with silvopasturing sheep in the early stages of the project, but concluded that for them, too much additional monitoring of the grazing was required to ensure protection of the nut tree seedlings from livestock damage.

Free-range, pastured laying hens however, were an ideal addition to the cropping system and they plan to experiment with pasturing sheep and pigs again in the intermediate phase of the silvopasture. Future use will also employ electric fencing and rotational grazing once the trees have grown past their greatest vulnerability to animal impacts.

Poultry, by virtue of their small size, are generally the least impactful livestock species on trees in any development phase. If poultry are confined to a small area however, they could scratch or 'root down' to bare soil and damage tree and shrub roots. As with all livestock, therefore, adequate rest and rotation should be used, even on small lots. Year-round pasturing without rest is not a beneficial practice.

Silvopasture Benefits

Poultry Benefits to Trees

- Reduce competition from forages.
- Deposit and 'scratch in' nutrients.
- Speed decomposition of organic matter.
- Consume insect pests and weed seeds.



Tree Benefits to Poultry

- Meet certification requirements.
- Reduce disease transmission.
- Animal welfare.

Although established primarily for a transition tool in the establishment of their nut orchard, pasturing poultry in the nut trees leverages other benefits for the production of both livestock and trees.

Poultry benefit the trees by relieving some competition from the forages immediately around the tree seedlings. The chickens deposit feces and scratch this into the soil, which increases the soil nutrients available to the tree seedlings. The same scratching behaviour also helps to break down larger surface organic material and hastens its decomposition and the release of useful plant nutrients. The chickens also consume weed seeds from the silvopasture. And the flock are aggressive consumers of insects, reducing the pest populations that can consume, damage or entangle tree leaves (e.g. leaf rollers).

The trees also provide benefits to the poultry production. Silvopastoral systems can fit well within organic and animal welfare certifications that dictate that poultry must have access to an outdoor range. Distributing poultry feces over a silvopasture as they forage, also prevents concentrations that can harbour disease, and minimize it's transmission within the flock or to wild bird populations. Shade and shelter from the maturing trees will provide protection from weather extremes, although this will be minimal during the herbaceous phase. In addition, domestic chickens are descended from wild, forest-dwelling ancestors. Their general comfort and 'happiness' may be supported by having access to treed agricultural landscapes.

Questions and Discussion



Question and answer break.